

IN THE CLAIMS:

Please cancel Claim 39 without prejudice to or disclaimer of the subject matter recited therein.

Please amend Claims 32-38 and 40-47 to read as follows:

1-31. (Canceled)

32. (Currently Amended) An apparatus comprising:

a mirror having a reflection surface ~~which~~ that reflects ~~incident~~ light and a rear surface that is located opposite to the reflection surface;

a heat-radiation ~~member~~ plate arranged outside said mirror and outside a passage area for light incident on and reflected from the reflection surface, and facing the reflection surface at a light incidence side of said mirror, said heat-radiation plate being spaced away from the reflection surface, and arranged nearer the reflection surface than the rear surface of said mirror and arranged outside a light path of the incident light and light reflected from the reflection surface; and

~~a temperature control member adapted to control temperature of a cooling mechanism configured to cool~~ said heat-radiation ~~member~~ plate.

33. (Currently Amended) ~~The~~ An apparatus according to claim 32, further comprising another heat-radiation ~~member~~ plate arranged ~~at a side opposite to the light incidence side of said mirror and spaced away from a surface opposite to the reflection surface of said mirror~~ outside said mirror and the passage area, and facing the rear surface,

said another heat-radiation plate being spaced away from the rear surface, and arranged nearer the rear surface than the reflection surface.

34. (Currently Amended) ~~The~~ An apparatus according to claim 32, wherein the reflection surface is curved, and said heat-radiation ~~member plate~~ includes a curved surface corresponding to the reflection surface ~~of said mirror~~.

35. (Currently Amended) ~~The~~ An apparatus according to claim 32, wherein said heat-radiation ~~member plate~~ is divided into a plurality of elements thereof comprises a plurality of radiation plates, and wherein the light path passage area is arranged between at least two of ~~the said plurality of radiation plates elements~~.

36. (Currently Amended) ~~The~~ An apparatus according to claim 35, wherein ~~temperature of the~~ said cooling mechanism is configured to cool said plurality of ~~heat-radiation plates are controlled elements~~ individually.

37. (Currently Amended) ~~The~~ An apparatus according to claim 32, wherein said ~~temperature control member~~ cooling mechanism includes a pipe which is connected to said heat-radiation ~~member plate~~, and wherein ~~temperature controlled liquid or gas through which a coolant flows inside the pipe~~.

38. (Currently Amended) ~~The~~ An apparatus according to claim 37, ~~further comprising wherein said cooling mechanism includes:~~

~~a mirror temperature detection unit adapted to detect a temperature of said mirror; and~~

~~a coolant temperature detection unit adapted to detect a temperature of liquid or gas flowing out of said heat-radiation member;~~

~~wherein said temperature control member controls a temperature of liquid or gas flowing into said heat-radiation member based on information concerning the incident light to said mirror, detection result of said mirror temperature detection unit and detection result of said coolant temperature detection unit.~~

a first thermometer configured to measure temperature of said mirror;

a second thermometer configured to measure temperature of the coolant;

and

a controller configured to estimate an amount of light incident on the reflection surface to obtain an estimated amount of the light, and to control temperature of the coolant based on measurement obtained by said first thermometer, measurement obtained by said second thermometer and the estimated amount of the light.

39. (Cancelled)

40. (Currently Amended) ~~The~~ An apparatus according to claim 38, wherein said ~~mirror temperature detection unit includes~~ first thermometer is a radiation thermometer arranged ~~to be spaced away~~ away from said mirror.

41. (Currently Amended) [The] An apparatus according to claim ~~[[32]]~~ 36, further comprising a ~~mirror temperature detection unit adapted to detect~~ thermometer configured to measure temperature of said mirror at a plurality of points,

wherein ~~temperature control member controls at least one of temperature and said heat-radiation member based on a temperature distribution on said mirror calculated from detection result of said mirror temperature detection unit~~ said cooling mechanism is configured to cool said plurality of elements individually based on measurement obtained by said thermometer.

42. (Currently Amended) ~~The~~ An apparatus according to claim 32, wherein said heat-radiation ~~member~~ plate includes an ~~opening, and wherein the light path~~ opening in which the passage area is arranged through the opening.

43. (Currently Amended) ~~The~~ An apparatus according to claim 32, wherein said temperature control member includes a pipe, in which temperature controlled liquid or gas flows, and a solid heat-transfer element, which is arranged between said heat-radiation member and the pipe and connected to said heat-radiation member and the pipe said cooling mechanism includes:

a solid heat-transfer element attached to said heat-radiation plate and configured to transfer heat from said heat-radiation plate; and

a pipe which is connected to said solid heat-transfer element and in which a coolant flows.

44. (Currently Amended) ~~The~~ An apparatus according to claim 32, further comprising:

~~a mirror support member adapted to support said mirror;~~

~~a heat-radiation member support member adapted to support said heat-radiation member; and~~

~~a mirror barrel to which said mirror support member and said heat-radiation member are fixed;~~

a mirror barrel configured to accommodate said mirror;

a mirror support fixed to said mirror barrel and configured to support said mirror in said mirror barrel; and

a heat-radiation plate support configured to support said heat-radiation plate in said mirror barrel.

45. (Currently Amended) ~~The~~ An apparatus according to claim [[32]] 44, further comprising:

~~a mirror support member adapted to support said mirror;~~

~~a heat-radiation member support member adapted to support said heat-radiation member;~~

~~a mirror barrel to which said mirror support member is fixed; and~~

~~a base~~ which is separated from said mirror barrel and to which said heat-radiation ~~member~~ plate support is fixed [,]

~~wherein said mirror barrel and said base are separated from each other.~~

46. (Currently Amended) An exposure apparatus for exposing a substrate to light via an original, said apparatus comprising:

a mirror having a reflection surface ~~which~~ that reflects ~~incident~~ light and a rear surface that is located opposite to the reflection surface;

a heat-radiation ~~member~~ plate arranged outside said mirror and a passage area for light incident on and reflected from the reflection surface, and facing the reflection surface at a light incidence side of said mirror, said heat-radiation plate being spaced away from the reflection surface, and arranged nearer from the reflection surface than from the rear surface of said mirror and arranged outside a light path of the incident light and light reflected from the reflection surface; and

~~a temperature control member adapted to control temperature of~~ a cooling mechanism configured to cool said heat-radiation ~~member~~ plate,

wherein said mirror is configured and positioned to guide ~~the~~ light to at least one of the original and the substrate.

47. (Currently Amended) A method of fabricating a device, said method comprising steps of:

exposing a substrate to light via an original using an exposure apparatus, said ~~the~~ exposure apparatus ~~comprising, a mirror apparatus comprising a mirror having a reflection surface which that reflects incident light and a rear surface that is located opposite to the reflection surface;~~ a heat-radiation ~~member plate~~ arranged outside said mirror and a passage area for light incident on and reflected from the reflection surface, and facing the reflection surface at a light incidence side of said mirror, said heat-radiation plate being spaced away from the reflection surface, and arranged nearer from the reflection surface than from the rear surface of said mirror and arranged outside a light path of the incident light and light reflected from the reflection surface; and a temperature control member adapted to control temperature of a cooling mechanism configured to cool said heat-radiation ~~member plate~~, wherein said mirror is configured and positioned to guide ~~the~~ light to at least one of the original and the substrate;

developing the exposed substrate; and

processing the developed substrate to fabricate the device.